

WHAT IS CLAIMED IS:

1. A data holding display apparatus, comprising:

display means of data holding type for displaying a display signal, said display means being divided into a plurality of display sections each capable of being independently driven, and in said display means the display signal being written into data signal lines connected to pixels of the display section that have been selected;

a plurality of data signal line driving means, provided for the respective display sections, for supplying the data signal line with the display signal corresponding to inputted display data; and

control means for supplying each of the data signal line driving means with either one of the display data corresponding to input image signal and interpolation display data prepared in accordance with the input image signal during at least one time period among a plurality of time periods in one cycle in a displaying of said display means, whereas supplying said each of the data signal line driving means with the other one of the display data and the interpolation display data during at least one other time period among the plurality of time periods.

2. The data holding display apparatus as set forth in claim 1, wherein:

said display means has a display area which is divided into first and second display sections;

the plurality of time periods includes first and second time periods; and

said control means (a) supplies the data signal line driving means of the first display section with the display data corresponding to the input image signal during the first time period whereas supplies with the interpolation display data prepared in accordance with the input image signal during the second time period, and (b) supplies the data signal line driving means of the second display section with the interpolation display data prepared in accordance with the input image signal during the first time period whereas supplies with the display data corresponding to the input image signal during the second time period.

3. The data holding display apparatus as set forth in claim 2, wherein the interpolation display data is prepared in accordance with (a) a current image signal of a current one cycle corresponding to the display section carrying out a display in accordance with the interpolation display data and (b) a neighboring image signal that is one cycle earlier or one cycle later than the current image signal.

4. The data holding display apparatus as set forth in

claim 3, wherein the interpolation display data has a signal level of (a) greater than a smaller one of the current image signal and the neighboring image signal and of (b) smaller than a greater one of the current image signal and the neighboring image signal, when these image signals are different from each other.

5. The data holding display apparatus as set forth in claim 4, wherein the interpolation display data has a signal level of an average of the current image signal and the neighboring image signal.

6. The data holding display apparatus as set forth in claim 1, wherein said control means includes arithmetic means for calculating and finding the interpolation display data.

7. The data holding display apparatus as set forth in claim 1, wherein the one cycle in the displaying of said display means is one frame cycle of the input image signal.

8. The data holding display apparatus as set forth in claim 1, wherein the plurality of time periods includes first and second time periods, and a time deviation between the first and second time periods is equal to one

half of a frame cycle.

9. The data holding display apparatus as set forth in claim 8, wherein:

said display area is divided into first and second display sections;

a time period required for the scanning signal line driving means to scan the first display section and a time period required for the scanning signal line driving means to scan the second display section are respectively one half of a frame period; and

the first and second display sections are simultaneously scanned.

10. The data holding display apparatus as set forth in claim 9, wherein:

one of the interpolation display data supplied to the data signal line driving means of the respective first and second display sections during one frame cycle is prepared in accordance with a first input image signal which is supplied to the data signal line driving means during one frame cycle and a second input image signal which is one frame earlier than the first input image signal; and

the other of the interpolation display data is prepared in accordance with the first input image signal

and a third input image signal which is one frame later than the first input image signal.

11. A television set comprising a data holding display apparatus,

said data holding display apparatus including:

display means of data holding type, which is divided into a plurality of display sections each is capable of being independently driven, and into which a display signal is written into data signal lines connected to pixels of the display section that have been selected;

a plurality of data signal line driving means, provided for the respective display sections, for supplying the data signal line with the display signal corresponding to inputted display data; and

control means for supplying each of the data signal line driving means with either one of the display data corresponding to input image signal and interpolation display data prepared in accordance with the input image signal during at least one time period among a plurality of time periods in one cycle in a displaying of said display means, whereas supplying said each of the data signal line driving means with the other one of the display data and the interpolation display data during at least one other time period among the plurality of time periods.

12. A data holding display apparatus, comprising:
display means of data holding type for displaying a
display signal,

said display means including:

a plurality of scanning signal lines;

a plurality of data signal lines provided so as to
intersect with the scanning signal lines; and

pixels provided in a matrix manner at respective
intersections of the scanning signal lines and the data
signal lines;

said display means having a display area which is
divided, in a direction where the scanning signal lines are
provided, into a plurality of display sections each capable
of being independently driven, and in said display means
the display signal being written into data signal lines
connected to pixels of the display section that have been
selected,

scanning signal line driving means for sequentially
selecting the scanning signal lines,

data signal line driving means, provided for the
respective display sections, for supplying the data signal
lines with the display signal corresponding to inputted
display data, and

control means for (a) controlling the scanning signal
line driving means such that the scanning signal lines in
the respective display sections are scanned collaterally

and the scanning signal lines in the respective display sections are sequentially selected during a plurality of time periods of one cycle in a displaying of the display means, so as to repeatedly scan the respective display sections in the one cycle as many times as the number of the time periods, and (b) supplying the data signal line driving means of the respective display sections with either one of the display data corresponding to an input image signal and an interpolation display data prepared in accordance with the input image signal during at least one of the time periods whereas with the other during at least one other time period.

13. The data holding display apparatus as set forth in claim 12, wherein:

the interpolation display data is prepared in accordance with (a) a current image signal of a current one cycle corresponding to the display section carrying out a display in accordance with the interpolation display data and (b) a neighboring image signal that is one cycle earlier or one cycle later than the current image signal.

14. The data holding display apparatus as set forth in claim 13, wherein the interpolation display data has a signal level of (a) greater than a smaller one of the current image signal and the neighboring image signal and of (b)

smaller than a greater one of the current image signal and the neighboring image signal, when these image signals are different from each other.

15. The data holding display apparatus as set forth in claim 14, wherein the interpolation display data has a signal level of an average of the current image signal and the neighboring image signal.

16. The data holding display apparatus as set forth in claim 12, wherein said control means includes arithmetic means for calculating and finding the interpolation display data.

17. The data holding display apparatus as set forth in claim 12, wherein the one cycle in the displaying of said display means is one frame cycle of the input image signal.

18. A television set, comprising a data holding display apparatus,

said data holding display apparatus including:

display means of data holding type for displaying a display signal,

said display means including:

a plurality of scanning signal lines;

a plurality of data signal lines provided so as to intersect with the scanning signal lines; and

pixels provided in a matrix manner at respective intersections of the scanning signal lines and the data signal lines;

said display means having a display area which is divided, in a direction where the scanning signal lines are provided, into a plurality of display sections each capable of being independently driven, and in said display means the display signal being written into data signal lines connected to pixels of the display section that have been selected,

scanning signal line driving means for sequentially selecting the scanning signal lines,

data signal line driving means, provided for the respective display sections, for supplying the data signal lines with the display signal corresponding to inputted display data, and

control means for (a) controlling the scanning signal line driving means such that the scanning signal lines in the respective display sections are scanned collaterally and the scanning signal lines in the respective display sections are sequentially selected during a plurality of time periods of one cycle in a displaying of the display means, so as to repeatedly scan the respective display sections in the one cycle as many times as the number of

the time periods, and (b) supplying the data signal line driving means of the respective display sections with either one of the display data corresponding to an input image signal and an interpolation display data prepared in accordance with the input image signal during at least one of the time periods whereas with the other during at least one other time period.

19. A data holding display apparatus, comprising:

display means of data holding type for displaying a display signal,

said display means including:

a plurality of scanning signal lines;

a plurality of data signal lines provided so as to intersect with the scanning signal lines; and

pixels provided in a matrix manner at respective intersections of the scanning signal lines and the data signal lines;

said display means having a display area which is divided, in a direction where the scanning signal lines are provided, into a plurality of display sections each capable of being independently driven, and in said display means the display signal being written into data signal lines connected to pixels of the display section that have been selected,

scanning signal line driving means for sequentially

selecting the scanning signal lines, and

data signal line driving means, provided for the respective display sections, for supplying the data signal lines with the display signal corresponding to inputted display data,

the display area being divided into first and second display sections,

said data holding display apparatus, further comprising:

control means for (a) controlling the scanning signal line driving means such that the scanning signal lines in the first and second display sections are respectively scanned during a first time period and a second time period that is adjacent to the first time period of one cycle in a displaying of the display means, so as to repeatedly scan the respective first and second display sections twice in the one cycle, and (b) supplying the data signal line driving means of the first display section with the display data corresponding to an input image signal during the first time period whereas with an interpolation display data prepared in accordance with the input image signal during the second time period,

said control means supplying the data signal line driving means of the second display section with an interpolation display data prepared in accordance with the input image signal during the first time period whereas

with the display data corresponding to the input image signal during the second time period.

20. The data holding display apparatus as set forth in claim 19, wherein the interpolation display data is prepared in accordance with (a) a current image signal of a current one cycle corresponding to the display section carrying out a display in accordance with the interpolation display data and (b) a neighboring image signal that is one cycle earlier or one cycle later than the current image signal.

21. The data holding display apparatus as set forth in claim 20, wherein the interpolation display data has a signal level of (a) greater than a smaller one of the current image signal and the neighboring image signal and of (b) smaller than a greater one of the current image signal and the neighboring image signal, when these image signals are different from each other.

22. The data holding display apparatus as set forth in claim 21, wherein the interpolation display data has a signal level of an average of the current image signal and the neighboring image signal.

23. The data holding display apparatus as set forth

in claim 19, wherein said control means includes arithmetic means for calculating and finding the interpolation display data.

24. The data holding display apparatus as set forth in claim 19, wherein the one cycle in the displaying of said display means is one frame cycle of the input image signal.

25. The data holding display apparatus as set forth in claim 19, wherein a time deviation between the first and second time periods is equal to one half of a frame cycle.

26. The data holding display apparatus as set forth in claim 25, wherein:

a time period required for the scanning signal line driving means to scan the first display section and a time period required for the scanning signal line driving means to scan the second display section are respectively one half of a frame period; and

the first and second display sections are simultaneously scanned.

27. The data holding display apparatus as set forth in claim 26, wherein:

one of the interpolation display data supplied to the data signal line driving means of the respective first and second display sections during one frame cycle is prepared in accordance with a first input image signal which is supplied to the data signal line driving means during one frame cycle and a second input image signal which is one frame earlier than the first input image signal; and

the other of the interpolation display data is prepared in accordance with the first input image signal and a third input image signal which is one frame later than the first input image signal.

28. A television set, comprising a data holding display apparatus,

said data holding display apparatus including:

display means of data holding type for displaying a display signal,

said display means including:

a plurality of scanning signal lines;

a plurality of data signal lines provided so as to intersect with the scanning signal lines; and

pixels provided in a matrix manner at respective intersections of the scanning signal lines and the data signal lines,

said display means having a display area which is

divided, in a direction where the scanning signal lines are provided, into a plurality of display sections each capable of being independently driven, and in which the display signal is written into data signal lines connected to pixels of the display section that have been selected,

scanning signal line driving means for sequentially selecting the scanning signal lines, and

data signal line driving means, provided for the respective display sections, for supplying the data signal lines with the display signal corresponding to inputted display data,

the display area being divided into first and second display sections,

said data holding display apparatus, further comprising:

control means for (a) controlling the scanning signal line driving means such that the scanning signal lines in the first and second display sections are sequentially scanned during a first time period and a second time period that is adjacent to the first time period of one cycle in a displaying of the display means, so as to repeatedly scan the respective first and second display sections twice in the one cycle, and (b) supplying the data signal line driving means of the first display section with the display data corresponding to an input image signal during the first time period whereas with an interpolation display

data prepared in accordance with the input image signal during the second time period,

said control means supplying the data signal line driving means of the second display section with an interpolation display data prepared in accordance with the input image signal during the first time period whereas with the display data corresponding to the input image signal during the second time period.

29. A driving method of a data holding display apparatus, comprising the steps of:

using display means of data holding type, which is divided into a plurality of display sections each capable of being independently driven, and into which a display signal is written into data signal lines connected to pixels of the display section that have been selected; and

supplying each of the display sections with either one of the display data corresponding to input image signal and interpolation display data prepared in accordance with the input image signal during at least one time period among a plurality of time periods in one cycle in a displaying of said display means, whereas supplying said each of the display sections with the other one of the display data and the interpolation display data during at least one other time period among the time periods.

30. The driving method as set forth in claim 29, wherein:

said display means has a display area which is divided into first and second display sections,

the first display section is supplied with the display signal corresponding to an input image signal during the first time period whereas with an interpolation display signal prepared in accordance with the input image signal during the second time period, and

the second display section is supplied with an interpolation display signal prepared in accordance with the input image signal during the first time period whereas with the display signal corresponding to the input image signal during the second time period.

31. The driving method as set forth in claim 30, wherein a time deviation between the first and second time periods is equal to one half of a frame cycle.

32. The driving method as set forth in claim 31, wherein:

a time period required for scanning the first display section and a time period required for scanning the second display section are respectively one half of a frame period; and

the first and second display sections are

simultaneously scanned.

33. A driving method of a data holding display apparatus, comprising the steps of:

using display means of data holding type for displaying a display signal, said display means having a display area which is divided, in a direction where the scanning signal lines are provided, into a plurality of display sections each capable of being independently driven, and in said display means the display signal being written into data signal lines connected to pixels of the display section that have been selected;

scanning the scanning signal lines in the respective display sections collaterally and sequentially selecting the scanning signal lines in the respective display sections during a plurality of time periods of one cycle in a displaying of the display means, so as to repeatedly scan the respective display sections in the one cycle as many times as the number of the time periods; and

supplying the respective display sections with either one of the display data corresponding to an input image signal and an interpolation display data prepared in accordance with the input image signal during at least one of the time periods whereas with the other during at least one other time period.

34. The driving method as set forth in claim 33, wherein the display area of the display means is divided into first and second display sections,

said method further comprising the steps of:

sequentially selecting the scanning signal lines in the first and second display sections, respectively, during a first time period and a second time period that is adjacent to the first time period of one cycle in a displaying of the display means, so as to repeatedly scan the respective first and second display sections twice in the one cycle;

supplying the first display section with a display signal corresponding to the input image signal during the first time period whereas with an interpolation display data prepared in accordance with the input image signal during the second time period; and

supplying the second display section with an interpolation display signal prepared in accordance with the input image signal during the first time period whereas with the display signal corresponding to the input image signal during the second time period.

35. The driving method as set forth in claim 34, wherein a time deviation between the first and second time periods is equal to one half of a frame cycle.

36. The driving method as set forth in claim 35, wherein:

a time period required for scanning the first display section and a time period required for scanning the second display section are respectively one half of a frame period; and

the first and second display sections are simultaneously scanned.

37. A data holding display apparatus, comprising:

a display panel of data holding type, which is divided into a plurality of display sections each capable of being independently driven, and into which a display signal is written into data signal lines connected to pixels of the display section that have been selected;

a plurality of data signal line driving circuits, provided for the respective display sections, for supplying the data signal line with the display signal corresponding to inputted display data; and

a control circuit for supplying each of the data signal line driving circuits with either one of the display data corresponding to input image signal and interpolation display data prepared in accordance with the input image signal during at least one time period among a plurality of time periods in one cycle in a displaying of said display means, whereas supplying said each of the data signal

line driving circuits with the other one of the display data and the interpolation display data during at least one other time period among the plurality of time periods.

38. A data holding display apparatus, comprising:

a display panel of data holding type for displaying a display signal,

said display panel including:

a plurality of scanning signal lines;

a plurality of data signal lines provided so as to intersect with the scanning signal lines; and

pixels provided in a matrix manner at respective intersections of the scanning signal lines and the data signal lines,

said display panel having a display area which is divided, in a direction where the scanning signal lines are provided, into a plurality of display sections each capable of being independently driven, and in said display panel the display signal being written into data signal lines connected to pixels of the display section that have been selected,

a scanning signal line driving circuit for sequentially selecting the scanning signal lines,

data signal line driving circuits, provided for the respective display sections, for supplying the data signal lines with the display signal corresponding to inputted

display data, and

a control circuit for (a) controlling the scanning signal line driving circuit such that the scanning signal lines in the respective display sections are scanned collaterally and the scanning signal lines in the respective display sections are sequentially selected during a plurality of time periods of one cycle in a displaying of the display panel, so as to repeatedly scan the respective display sections in the one cycle as many times as the number of the time periods, and (b) supplying the data signal line driving circuits of the respective display sections with either one of the display data corresponding to an input image signal and an interpolation display data prepared in accordance with the input image signal during at least one of the time periods whereas with the other during at least one other time period.

39. A data holding display apparatus, comprising:

a display panel of data holding type for displaying a display signal,

said display panel including:

a plurality of scanning signal lines;

a plurality of data signal lines provided so as to intersect with the scanning signal lines; and

pixels provided in a matrix manner at respective intersections of the scanning signal lines and the data

signal lines,

said display panel having a display area which is divided, in a direction where the scanning signal lines are provided, into a plurality of display sections each capable of being independently driven, and in said display panel the display signal being written into data signal lines connected to pixels of the display section that have been selected,

a scanning signal line driving circuit for sequentially selecting the scanning signal lines, and

data signal line driving circuits, provided for the respective display sections, for supplying the data signal lines with the display signal corresponding to inputted display data,

the display area being divided into first and second display sections,

said data holding display apparatus, further comprising:

a control circuit for (a) controlling the scanning signal line driving circuit such that the scanning signal lines in the first and second display sections are sequentially scanned, respectively, during a first time period and a second time period that is adjacent to the first time period of one cycle in a displaying of the display panel, so as to repeatedly scan the respective first and second display sections twice in the one cycle, and (b)

supplying the data signal line driving circuit of the first display section with the display data corresponding to an input image signal during the first time period whereas with an interpolation display data prepared in accordance with the input image signal during the second time period,

said control circuit supplying the data signal line driving circuit of the second display section with an interpolation display data prepared in accordance with the input image signal during the first time period whereas with the display data corresponding to the input image signal during the second time period.

40. A driving method of a data holding display apparatus, comprising the steps of:

using a display panel of data holding type, which is divided into a plurality of display sections each capable of being independently driven, and into which a display signal is written into data signal lines connected to pixels of the display section that have been selected; and

supplying each of the display sections with either one of the display data corresponding to input image signal and interpolation display data prepared in accordance with the input image signal during at least one time period among a plurality of time periods in one cycle in a displaying of said display panel, whereas supplying said each of the display sections with the other one of the

display data and the interpolation display data during at least one other time period among the time periods.

41. A driving method of a data holding display apparatus, comprising the steps of:

using a display panel of data holding type for displaying a display signal, said display panel having a display area which is divided, in a direction where the scanning signal lines are provided, into a plurality of display sections each capable of being independently driven, and in said display panel the display signal being written into data signal lines connected to pixels of the display section that have been selected;

scanning the scanning signal lines in the respective display sections collaterally and sequentially selecting the scanning signal lines in the respective display sections during a plurality of time periods of one cycle in a displaying of the display means, so as to repeatedly scan the respective display sections in the one cycle as many times as the number of the time periods; and

supplying the respective display sections with either one of the display data corresponding to an input image signal and an interpolation display data prepared in accordance with the input image signal during at least one of the time periods whereas with the other during at least one other time period.